

**Friday, 16 September**

**Location:** NRC Research Facilities  
100 Sussex Drive, Ottawa, Ontario  
K1A 0R6, Canada

8:00	Registration & Coffee
8:25	Announcements <b>Dr. Phalguni Mukhopadhyaya</b> , Chair IVIS-X 2011
<b>T-4: Application of VIPs in Construction – III</b> (Session Chair – <b>Dr. Bas Baskaran</b> , NRC-IRC, Canada)	
8:30	<b>Double Layered Vacuum Insulation Panels</b> <b>S. Brunner et al.</b> , EMPA, Swiss Federal Laboratories for Materials Science and Technology, Switzerland
	<b>In situ Measurements of Façade Retrofitted with Vacuum Insulation Panels</b> <b>P. Johansson</b> , Chalmers University of Technology, Sweden
	<b>Application of Vacuum Insulation Panels in Low-Sloped Commercial Roofing Systems</b> <b>S. Molleti et al.</b> , National Research Council Canada, Canada
	<b>VIP Market Development Recommendations Based on the SELF Experimental Building</b> <b>M. Zimmermann et al.</b> , Swiss Federal Laboratories for Materials Science and Technology, Switzerland
10:00	Break and Refreshment/Poster Session
<b>T-5: Long-term Performance of VIP</b> (Session Chair – <b>Anil Parekh</b> , Natural Resources Canada)	
10:30	<b>Mass Transfer in the Envelope of Vacuum Insulation Panels, A Modeling Challenge for Aging Prediction</b> <b>M. Bouquerel et al.</b> , EDF R&D, CETHIL, INSA-LYON, France
	<b>Gas Permeation Characteristics through Heat-Sealed Flanges of VIPs</b> <b>I.S. Yeo et al.</b> , Korea Advanced Institute of Science and Technology, Korea
	<b>An Investigation on Long-Term Thermal Performance of Vacuum Insulation Panels (VIPs)</b> <b>P. Mukhopadhyaya et al.</b> , National Research Council Canada, Canada
	<b>Development of New Heat Sealing Technology “Wave Seal” for Long Term Performance of VIPs</b> <b>S. Kojima et al.</b> , Panasonic Corporation, Japan
12:00	Lunch

**T-6: Advances, Challenges and Opportunities – I**  
(Session Chair – **Dr. Wahid Maref**, NRC- IRC, Canada)

13:00	<b>Free-Form, High Energy Performance, Transparent Vacuum Envelope</b> <b>L. Alonso et al.</b> , School of Architecture, UPM, Spain
	<b>New Insulating Material from the Sunflower Stem Used as Alternative Core for Vacuum Insulation Panel</b> <b>R. Saiah et al.</b> , Laboratoire de Génie des Matériaux (LGMA), France
	<b>Developing 60 Year Lifetime Metallized VIP Laminates - Challenges and Solutions</b> <b>Y. Carmi</b> , Hanita Coatings RCA LTD, Israel
	<b>Vacuum and Nanotechnologies for the Thermal Insulation Materials of Beyond Tomorrow - From Concept to Experimental Investigations</b> <b>B. P. Jelle et al.</b> , SINTEF Building and Infrastructure, Norwegian University of Science and Technology (NTNU), Norway
	<b>LockPlate System ETICS with Integrated VIP - Experience from Building Practice</b> <b>L. Kubina</b> , Saint Gobain Weber Terranova, Czech Republic
15:00	Break and Refreshment/Poster Session
<b>T-7: Advances, Challenges and Opportunities – II</b> (Session Chair – <b>Dr. Samuel Brunner</b> , EMPA, Switzerland)	
15:30	<b>Barrier Development and Evaluation Methodology</b> <b>D.S. Musgrave</b> , Thermal Visions, Inc., USA
	<b>High Performance Steel Cladding Systems Using Vacuum Technology</b> <b>R.G. Ogden et al.</b> , Oxford Brookes University, UK
	<b>CSI Elevated Temperature Conductivity and Rapid Conductivity Test Method</b> <b>S. J. Rusek et al.</b> , Quietflex Goodman Global, USA
	<b>Quality Control of Vacuum Insulation Panels: Measurement of Internal Pressure and Moisture Content in High-Volume Manufacturing</b> <b>J. Flanigan et al.</b> , Nanopore Insulation, LLC, USA
17:00	Closing remarks <b>Dr. Phalguni Mukhopadhyaya</b> , Chair IVIS-X 2011
17:30	IVIS-X 2011 Closed



**Program at a Glance**  
**Sommaire du programme**

Ottawa, Canada  
September 15-16 septembre 2011



National Research Council Canada

Conseil national de recherches Canada

Canada

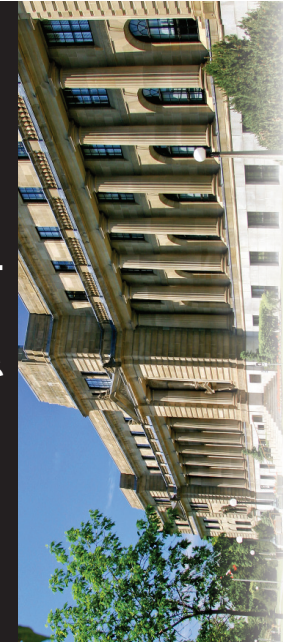
## Wednesday, 14 September



**Location:** Lord Elgin Hotel  
100 Elgin Street, Ottawa, Ontario,  
K1P 5K8, Canada

16:30– 18:30	IVIS-X Registration and Presymposium Reception
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## Thursday, 15 September



**Location:** NRC Research Facilities  
100 Sussex Drive, Ottawa, Ontario  
K1A 0R6, Canada

8:00	Registration & Coffee
8:30	Introduction & Housekeeping Announcements <b>Dr. Phalguni Mukhopadhyaya</b> , NRC-IRC, Canada, Chair IVIS-X 2011
8:40	<b>WELCOMING REMARKS</b> <b>Dr. Morad Atif</b> , Director General, NRC Institute for Research in Construction (NRC-IRC) and Chair, Executive Committee of the International Energy Agency's (IEA) Energy Conservation in Buildings and Community Systems
9:00	<b>KEYNOTE PRESENTATION</b> <b>New National Energy Code of Canada for Buildings 2011</b> <b>Heather Knudsen</b> , Canadian Codes Centre (CCC)
9:45	Questions & Discussion
10:00	Break and Refreshment/Poster Session

## T-1: Materials and Measurements

(Session Chair – *Dr. Roland Caps, va-Q-tec AG, Germany*)

10:30	Experimentally Evaluated Barrier Performance of SiO <sub>2</sub> Coated PET Film based Vacuum Insulation Panel (VIP) Envelope <i>M. Alam et al., Kingston University, UK</i>
	Microporous Silica Based Core Materials for High Performance VIPs <i>F. Menzel, Evonik Degussa, GmbH, Germany</i>
	Measurements of Thermal Properties of Vacuum Insulation Panels by using Transient Plane Source Sensor <i>P. Johansson et al., Chalmers University of Technology, Sweden</i>
	Wireless Integrated Pressure Sensor for Quality Control of Vacuum Insulation Panel <i>G. vom Boegel et al., Fraunhofer Institute Microelectronic Circuits and Systems (IMS), Germany</i>

12:00 Lunch

## T-2: Application of VIPs in Construction – I

(Session Chair – *Dr. M. Kumar Kumaran, NRC-IRC, Canada*)

13:00	Experimental and Numerical Investigations of Polystyrene Encapsulated Vacuum Insulation Panels - Heat Transfer Results <i>S. Van Den Bergh et al., Catholic University of Leuven (KUL), Belgium</i>
	Heat and Moisture Conditions in Walls with Vacuum Insulation Panels <i>K. Gudmundsson, KTH, Sweden</i>
	Evaluation on the Energy Performance of the Highly Efficient Material Using Vacuum Technology <i>J.-S. Kang et al., Korea Institute of Construction Technology, Republic of Korea</i>
	Incorporation of Vacuum Insulation Panels in a Wood Frame Net Zero Energy Home <i>A. Parekh et al., Natural Resources Canada, Canada</i>
	Application of VIP: Evaluation of Winter and Summer Energy Performance of External Walls with VIP in Buildings located in Middle Latitudes <i>M. Rossi et al., UNICAM – School of Architecture and Design, Italy</i>
15:00	Break and Refreshment/Poster Session

## T-3: Application of VIPs in Construction – II

(Session Chair – *Robin Sinha, Natural Resources Canada*)

15:30	Vacuum Insulation Panels (VIPs) Arrive in Northern Canada: Institutional Building Pilot Retrofit in Yukon <i>D. MacLean et al., Energy Solutions Centre, Canada</i>
	Energy Performance of Highly Insulated Wood-Frame Wall Systems Using A VIP <i>W. Maref et al., National Research Council Canada, Canada</i>
	New Modular VIP Systems - For Advanced Handling on Construction Site <i>G. Eirbenich and S.Knoll, Porextherm Dämmstoffe GmbH, Germany</i>
	Vacuum Insulated Thermal Storage <i>B. Fuchs et al., Georg-Simon-Ohm University of Applied Sciences, Germany</i>
	VIP System Retrofits of Heritage Buildings <i>M. W. B. Glover and M. T. Rosen, Ecotay Education Centre, Canada</i>
17:30	Closing remarks of day 1 <b>Dr. Phalguni Mukhopadhyaya</b> , Chair IVIS-X 2011

Photo: D. Gordon E. Robertson



**Location:** National Arts Centre  
53 Elgin Street, Confederation Square,  
Ottawa, Ontario, K1P 5W1, Canada

19:00 Banquet

## GUEST SPEAKER

**Dr. Ralph M. Paroli**, (Director, NRC Institute for Research in Construction, Canada, and member of the Board of Directors, ASTM International, USA)